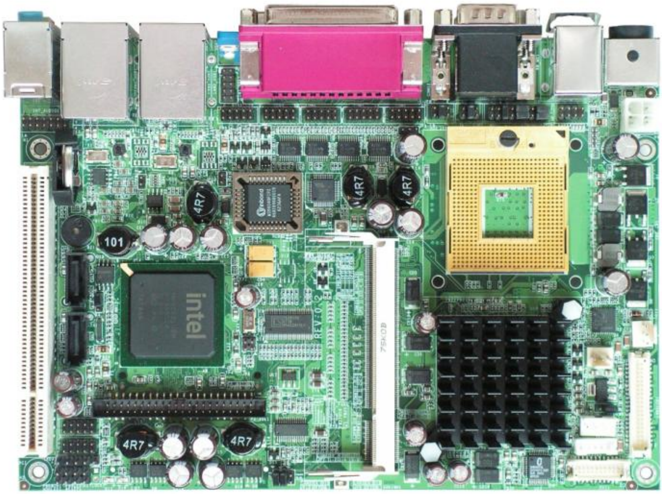
NASA-M5

Intel® Core™2 Duo 945GME Embedded Main-Board



User's Manual

Version 1.0

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Introduction

This manual is designed to give you information on the M5 Industrial Main Board. The topics covered in this manual are as follows:

- ✓ **Features**
- ✓ **Specification**
- ✓ **Jumper setting and Connectors**
- ✓ **BIOS Setup**
- ✓ **Appendix**

Chapter 1
Features & Specifications

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Features

- Support Intel Core2Duo, Core Duo, Pentium-M, Celeron-M or ULV CPU for either High Performance or Low Power demand.
- Support Dual Channel DDR2 667MHz memory up to 2GB.
- Compact Size design with Rich I/O functions in 190x135mm size only.
- Multiple I/O functions: 8 x USB2.0, 6x COM ports, 2x SATA, 1x IRDA, 1x PIDE, 1x CF, 1x LPT.
- Multiple display technology: CRT, DVI, Dual 24-bits LVDS, TV-OUT. Dual Independent display and rotation supported by drivers.
- Single DC 12V power Input only. Flexible power input connector for internal power or external AC/DC adapter.
- Provide Internal +5V/+12V power output connector to supply power to peripherals devices like SATA HDD or CDROM.
- Dual GbE LAN design maximized the communication bandwidth for both internet and intranet connection. Root Boot and Wake Up on LAN supported.
- High-Definition Audio with internal connection and external audio jack.
- LCD Brightness control with Software ready for Windows XP/2K.

Specifications

- **Processor Support:**
  - Intel Core2Duo, CoreDuo, CoreSolo, Celeron-M CPU.
  - Support Front Side Bus speed 533MHz or 667MHz
  - Micro-FCPGA478 Socket-M.
- **Major Chipset:**
  - Intel 945GME and ICH7M chipset.
  - RealTek RTL8111C LAN chip.
  - Winbond 83627HF Super I/O.
  - ALC888 HDA Audio chip.
- **System Memory:**
  - Two DDR2 SO-DIMM Sockets
  - Support DDR2 533/667 unregistered non-ECC memory up to 4.0 GB.
  - Dual Channel Mode Supported.
- **Video Controller:**
  - Intel 945GME Integrated GMA950 graphic engine.
  - One 15-Pins D-Sub Female connector for CRT displays.
  - One 40-pins pitch connector for Dual 18/24-bits LVDS LCD displays.
  - One 20-pins pitch connector for DVI displays.
  - One 7-pins Mini-DIN connector on rear support S-video and composite video signals for TV-OUT displays.
  - One 5-pins JST connector for Inverter power and brightness control.
- **Super I/O:**
  - Winbond 83627HF LPC I/F Super I/O chip.
  - Six Serial ports as COM1~COM6. COM2 is RS232/422/485 selectable by jumpers
  - COM1 and COM2 are D-Sub 9-pins male on rear panel. Pin9 are powered with either +5V or +12V by jumper.
  - COM3~COM6 are pin-header (2x5 pin-header/ 2mm pitch) for internal connections.
  - COM6 Pin9 is powered with either 5V or 12V selected by Jumper.
  - 1 x Parallel port supports SPP/ECP/EPP mode. (25-Pins D-Sub Female on Rear).
  - 1 x IrDA port; (5-pins pin-header with +5V powered).
  - Four USB2.0 ports for internal or front panel connection. (2x5 pin-header/ 2mm pitch).

- Four USB2.0 ports integrated with RJ45 connector on rear panel.
- One PS2 Keyboard and one PS2 mouse connector on rear panel.

- **Hardware Monitor:**
  - 83627HF integrated hardware monitor chip to monitor Voltages, temperatures and FAN speed.
  - Temperature Monitor: One sensor close to CPU socket for CPU temperature detection. One sensor close to 83627HF chip for board temperature detection.
  - One CPU FAN for CPU cooler and one SYS FAN for chassis FAN. All FAN speeds are monitored.
- **10/100M/1000M Ethernet:**
  - Two Realtek RT8111C chips on board for dual GbE LAN support.
  - Support Wake-on-LAN.
  - Remote Boot Agent is supported with PXE or RTL protocol.
- **PIDE and SATA:**
  - PIDE controller build in ICH7M support up to Ultra DMA mode 5 or ATA100 speed.
  - One standard 44-pins Box header to support 2.5" HDD or DOM Flash Disk.
  - One Compact Flash-II socket shared with PIDE Channel. One jumper to select as Master or Slave device.
  - Two SATA connectors from ICH7M support SATA-I and SATA-II devices.
- **Watchdog Timer:**
  - The WatchDog timer can be disabled/enabled through BIOS setup.
  - The timeout interval 1~255 seconds can be programmed through I/O address 842h/843h. The timeout event will generate the RESET.
- **CMOS:**
  - On-board RTC with 242 bytes of Battery-back CMOS RAM.
  - One 3-pins Jumper for users to clear CMOS data.
- **Audio:**
  - RealTek ALC888 High-Definition Audio chip on-board.
  - Two Audio-Jack on rear for Audio Line-OUT and MIC.
  - One 14-pins pin-header to provide internal audio device connection or surrounding speaker connection.
- **DIO:**
  - 8-bits Digital I/O control. Support 8-In, 8-out or 4-In/4-out.

- **BIOS:**
  - Award Standard PnP Flash BIOS 6.0.
  - 8Mbit FlashROM with BootBlock for Fail-safe.
  - BIOS utility for field update.
  - VBIOS and LAN remote Boot Agent integrated.
- **PCI Expansion Slot:**
  - One PCI 120-pins connector and support ETOP Riser card up to 3 PCI-slots.
- **Power Connector:**
  - DC 12V input connector with 4-pins Mini-DIN connector on rear panel.
  - Supply +5V and +12V output power with 4-pins 3.5" FDD type power connector.
- **Software Compatibility:**
  - Microsoft windows: Win2K, Win XP 32/64-bits, Vista 32/64-bits.
  - Linux: RedHat, SUSE.
  - DOS 6.0 and 6.22.
  - QNX v6.2, WinCE 5.0.
- **Cooling:**
  - Two cooling FAN connectors close to CPU for CPU cooler and System FAN.
  - Flat Heat-sink on top of 945GME and ICH7M chipset.
  - Screw holes and backplane to support Standard Pentium-M CPU Cooler.
- **Others:**
  - One Buzzer (9mm) on-board for beep message.
- **Operating Temperature:**
  - 0~60°C Operation Range.
  - Relative Humility: 5~95%, non-condensing.
- **Dimensions:**
  - 190mm(W) x 135mm(L)
  - 4 screw holes on four corners.

Chapter 2
Jumper setting & Connectors

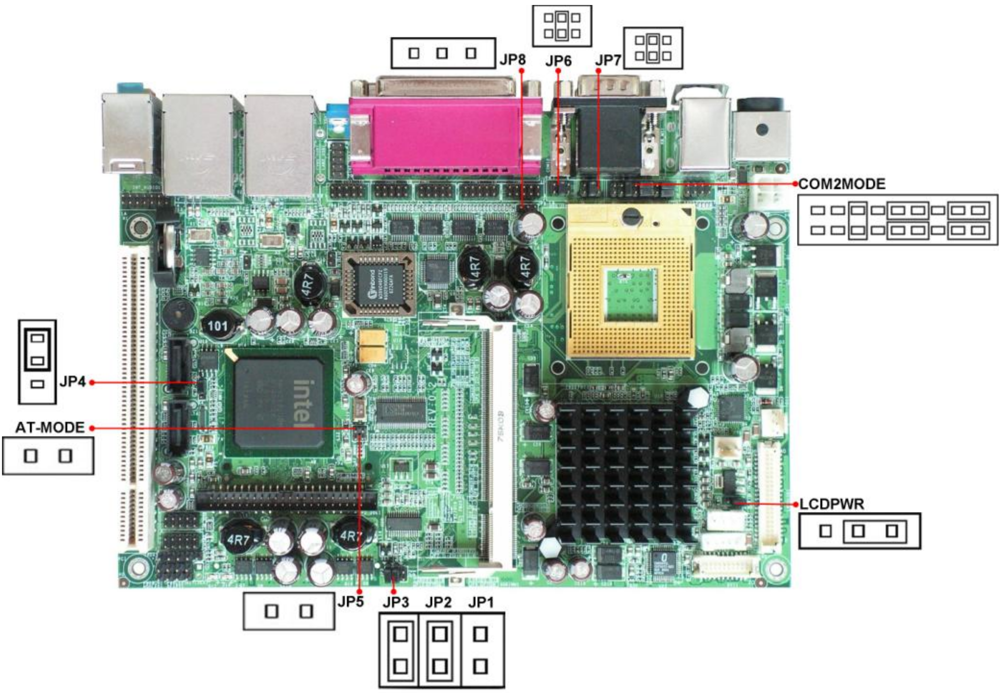
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2.1 Jumpers on the M5

The jumpers on the M5 allow you to configure your Main Board according to the needs of your applications. If you have doubts about the best jumper configuration for your needs, contact your dealer or sales representative. The following table lists the jumpers on M5 and their respective functions.

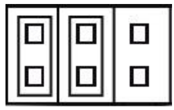
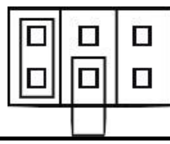
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Jumper Locations on the M5



JP1, JP2, JP3: FSB SPD Selection

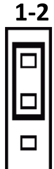
JP1 and JP2 and JP3 allow users to select the CPU FSB speed. It can be 533M or 667M. User should select the correct FSB speed to make their CPU run on correct speed and ensure the system runs stably.

FSB SPD	JP1~JP3
533M	JP3 JP2 JP1 
667M	JP3 JP2 JP1 

JP4: Clear CMOS RAM Data

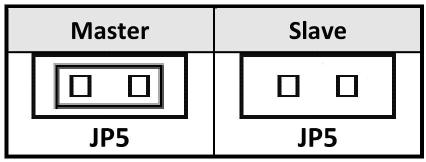
This 3-pin Jumper allows the user to disconnect the built-in 3V battery power to clear the information stored in the CMOS RAM. To clear the CMOS data:

(1) Turn off the system power,
(2) Remove Jumper cap from pin1&2,
(3) Short the pin2 and pin3 for three seconds,
(4) Put Jumper cap back to pin1 & 2.
(5) Turn on your computer,
(6) Hold Down <Delete> during boot up and enter BIOS setup to enter your preferences.

COMS	NORM	CLR
JP4	**1-2** 	**2-3** 

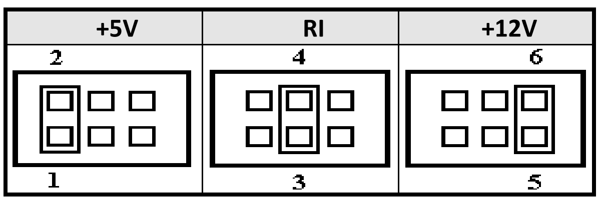
JP5: CF Card Mode Selection

This Jumper is to select the CF works as Secondary Channel Master device or Slave device.



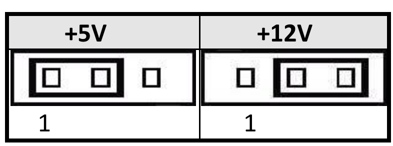
JP6, JP7: COM Power Selection

JP6, JP7 can be used to select the COM supple power: +5V, Ring-IN or +12V.
JP6: COM1 Pin9 power or Ring-IN
JP7: COM2 pin9 power or Ring-IN



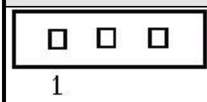
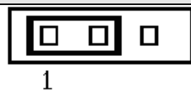
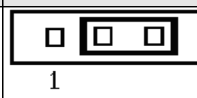
JP8: COM6 Power Pin (Pin9)

JP8: COM6 Pin9 power.

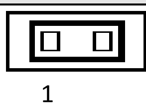
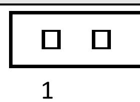


LCDPWR: LCD PANEL Power Selection

LCDPWR can be used to select the Panel LCD supple power: +3.3V or +5V.The default setting is on +3.3V.User need to check the LCD panel spec and adjust this jumper to make Panel work in specified power rail.
This Jumper serves LVDS LCD connector.

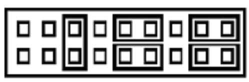
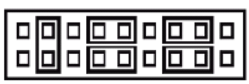
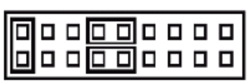
LCDPWR	+5V	+3.3V
		

AT MODE: AT Mode Selection

AT Mode	ATX Mode
	

COM2MODE: RS232/RS422/RS485

COM2 support multi-protocols include RS232, RS422 and RS485, while COM3, COM4. COM5 and COM6 support diffused RS232 protocol.
The Protocols of COM2 can be set up through jumpers.
COM2MODE: COM2 Protocols selection.
The pin-out for each mode is illustrated on next chapter.

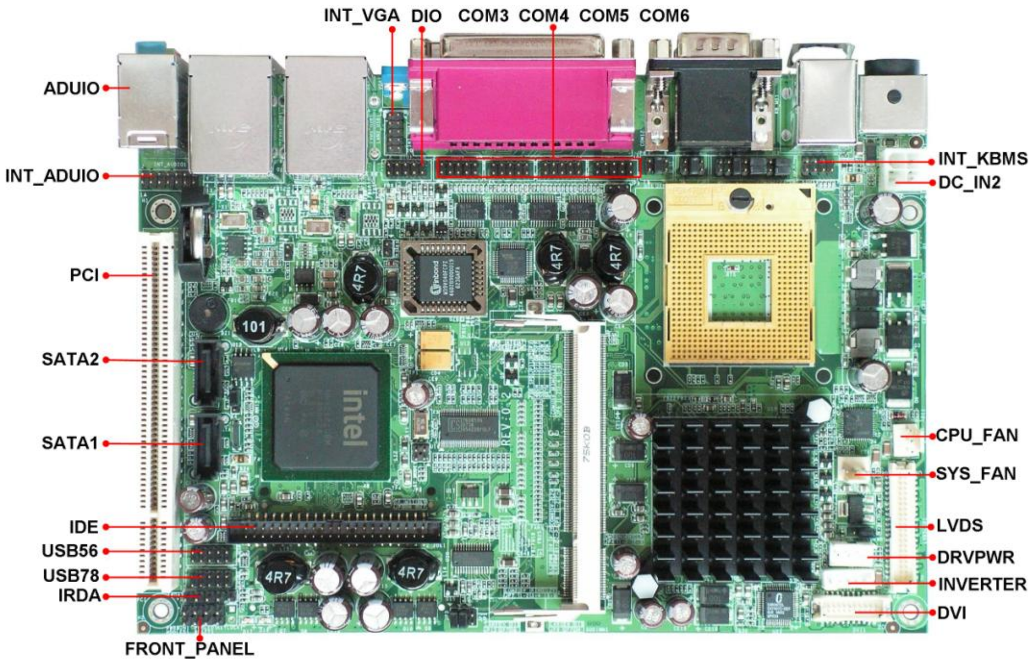
COM2MODE1	I/F TYPE
2 18  1 17	**RS-232**
2 18  1 17	**RS-422**
2 18  1 17	**RS-485**

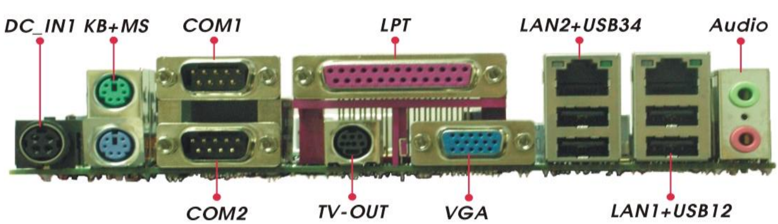
2.2 Connectors on the M5

The connector on the M5 allows you to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers and etc. The following table lists the connectors on M5 and their respective page number.

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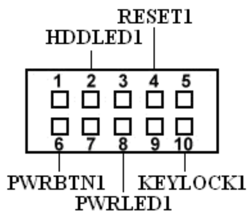
Connector Locations on the M5





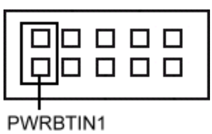
Front_Panel Connector

The front panel of the case has a control panel, which provides light indication of the computer activities and switches to change the computer status.



➢ **ATX Power ON/OFF Button**

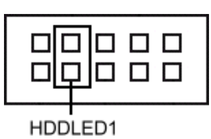
This 2-pin connector acts as the "Power Supply On/Off Switch" on the M5 main board. When pressed, the switch will force the Main board to power on. When pressed again, it will force the main board to power off.



PWR BTN Pin #	Signal Name
1	PWR-BTN
6	GND

➢ **IDE Hard Disk LED Connector**

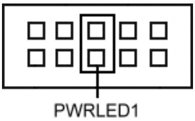
This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.



IDE LED Pin #	Signal Name
2	VCC
7	HDDLED

- **Power-On LED**

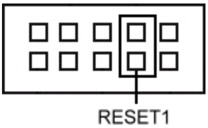
  This connector allows users to connect to Front Panel Power indicator.



PWR LED Pin #	Signal Name
3	VCC
8	Ground

- **RESET Switch**

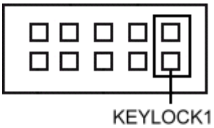
  The reset switch allows the user to reset the system without turning the main power switch off and then on. Orientation is not required when making a connection to this header.



RESET Pin #	Signal Name
4	Reset
9	Ground

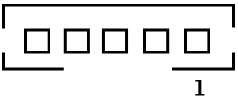
- **KEYLOCK Switch**

  The keylock switch, when closed, will disable the keyboard function.



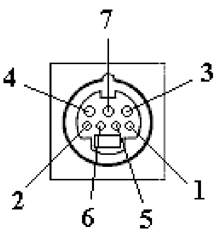
RESET Pin #	Signal Name
5	KEYLOCK
10	GND

BACKLIGHT Connector



Pin #	Signal Name
1	+12V
2	GND
3	Brightness
4	ON/OFF
5	GND

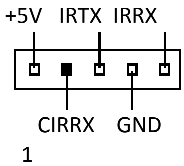
TV-OUT Connector



Pin #	Signal Name
1	GND
2	GND
3	LUMA
4	CHOMA
5	CVBS
6	GND
7	NC

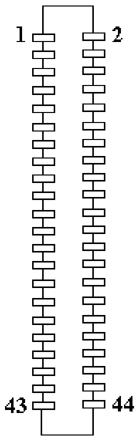
IRDA Connector

This connector is used for an IRDA connector for wireless communication.



IrDA Pin #	Signal Name
1	+5V
2	FIR
3	IR-RX
4	Ground
5	IR-TX

IDE Connectors

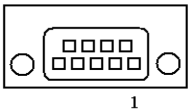


Primary IDE Connector

Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host PU 0
DACK	29	30	Ground
IRQ14	31	32	No connect
Address 1	33	34	P66DET
Address 0	35	36	Address 2
Chip select 1	37	38	Chip select 3
Activity LED	39	40	GND
VCC	41	42	VCC
GND	43	44	NC

COM1 Serial Ports

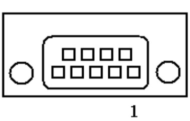
COM1, a 9-pin D-Sub male connector, is the onboard COM1 serial port of the M5. The following table shows its pin assignments.



Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	+5V,Ring-IN or +12V

COM2 Serial Ports

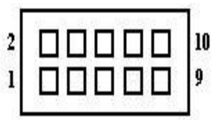
COM2, a 9-pin D-Sub male connector, is the onboard COM2 serial port of the M5. The following table shows its pin assignments.



Pin #	RS232 Mode Signal Name	RS422/RS485 Mode Signal Name
1	DCD, Data carrier detect	TX- (422/485)
2	RXD, Receive data	TX+ (422/485)
3	TXD, Transmit data	RX+ (422)
4	DTR, Data terminal ready	RX- (422)
5	GND, ground	GND
6	DSR, Data set ready	N.C.
7	RTS, Request to send	N.C.
8	CTS, Clear to send	N.C.
9	+5V,Ring-IN or +12V	N.C.

COM3, COM4,COM5 Serial Ports

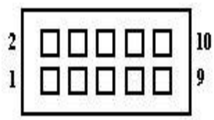
COM3, COM4, COM5 a 10-pin header connector, is the onboard COM3, COM4, COM5 serial port of the M5. The following table shows its pin assignments.



Pin #	RS232 Mode Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	Ring-IN
10	NC

COM6 Serial Ports

COM6, a 10-pin header connector, is the onboard COM6 serial port of the M5. The following table shows its pin assignments.

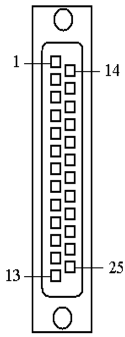


Pin #	RS232 Mode Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	+5V, +12V
10	NC

Pin9 is power pin to support devices required power. The voltage can be selected by jumper JP8.

LPT Port

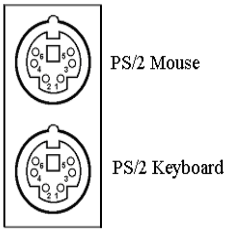
The LPT parallel port is a standard DSUB 25-pins Female connector. It can be configured as EPP or ECP or SPP mode.



Signal Name	Pin #	Pin #	Signal Name
Strobe	1	14	AUTOFD
DATA0	2	15	ERROR
DATA1	3	16	INIT
DATA2	4	17	SLIN
DATA3	5	18	GND
DATA4	6	19	GND
DATA5	7	20	GND
DATA6	8	21	GND
DATA7	9	22	GND
ACK	10	23	GND
BUSY	11	24	GND
PE	12	25	GND
SLCT	13		

PS/2 Keyboard & Mouse Connector

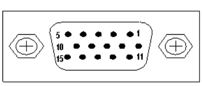
The following table describes the pin assignment of PS/2 Keyboard and Mouse connector.



Pin #	Signal Name
1	Keyboard/Mouse data
2	NC
3	GND
4	5V
5	Keyboard/Mouse clock
6	GND

VGA Connector

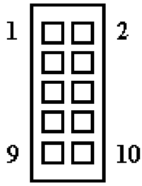
The pin assignments of VGA CRT connector are as follows:



Signal Name	Pin #	Pin #	Signal Name
Red	1	2	Green
Blue	3	4	N.C.
GND	5	6	GND
GND	7	8	GND
N.C.	9	10	GND
N.C.	11	12	DDC_DATA
HSYNC	13	14	VSYNC
DDC_CLK	15		

INT_VGA Connector

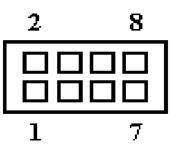
INT_VGA is for internal Video A/D board connection. The pin out is listed as below:



Signal Name	Pin #	Pin #	Signal Name
RED	1	2	GND
GREEN	3	4	GND
BLUE	5	6	GND
HSYNC	7	8	DDC_DATA
VSYNC	9	10	DDC_CLK

INT_KBMS Connector

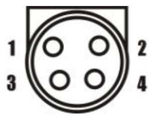
KBMS is for internal input devices or MSR connection. The pin out is listed as below:



Signal Name	Pin #	Pin #	Signal Name
VCC	1	2	GND
KBDAT	3	4	MSCLK
KBCLK	5	6	MSDAT
GND	7	8	VCC

DC_IN1 Connector

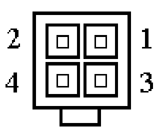
DC_IN1 is for external power input connection to supply system power. It needs to be +12V input from AC/DC adapter within 5% tolerance.
Users should calculate the total system power required and use sufficient rating adapter.



Signal Name	Pin #	Pin #	Signal Name
+12V	1	2	+12V
GND	3	4	GND

DC_IN2 Power Connector

The CD_IN2 power connector is for internal connection to +12V input power. If you already have external +12V power input connected on DC_IN1, please leave DC_IN2 unconnected.

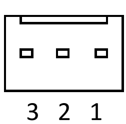


DC_IN2

Pin #	Signal Name
1	GND
2	GND
3	+12V
4	+12V

CPU Fan Power Connector

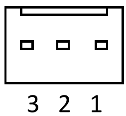
This is a 3-pin header for the CPU fan.



Pin #	Signal Name
1	Ground
2	+12V
3	CPUPWM

System FAN Power Connector

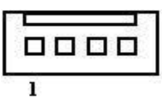
This is a 3-pin header for the system fan.



Pin #	Signal Name
1	Ground
2	+12V
3	SYSPWM

DRVPWR Connector

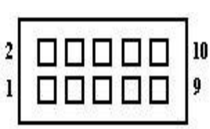
DRVPWR is output power connector to supply power required for peripheral device like Hard Disk, DOM, CDROM and etc.
The pin out is listed as below:



Signal Name	Pin #	Pin #	Signal Name
+5V	1	2	GND
GND	3	4	+12V

USB56 USB78 Connectors

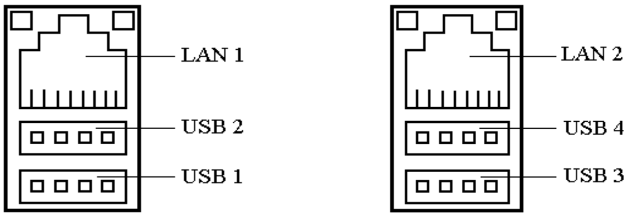
The following table shows the pin outs of the USB56 USB78 connectors.



USB5,USB6 USB7,USB8 Pin#		Signal Name
10	1	N.C.
2	9	+5V
8	3	Ground
4	7	USB-
6	5	USB+

LANGbE+USBx2 Connectors

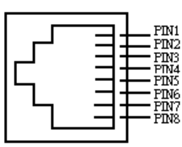
Below pictures show the location of LAN GbE ports and USB Type-A ports on the Combo GbE + USB connector.



Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker and etc., Have a standard USB interface. Also make sure your OS supports USB controller.
If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

LAN- GBE Connectors

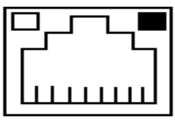
This connector is for the 10/100/1000Mbps Ethernet capability. The figure below shows the pin out assignments of this connector and its corresponding input jack.



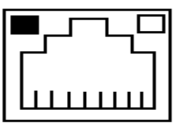
Pin #	Signal Name
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	MDI2+
6	MDI2-
7	MDI3+
8	MDI3-

LAN RJ45 LED1, 2

The LAN_LEDs on top of RJ45 are to display the current network connection status. The green color LED on the right-hand side shows the link status and TX/RX activity. The Orange/Green Dual color LED on the left-hand side indicates the operation mode, i.e. 10Base-T, 100Base-T or 1000Base-T.



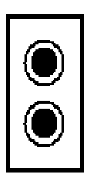
LNK/ACT	STATUS
YELLOW	Link
OFF	Disconnected
FLASH	Packets TX/RX



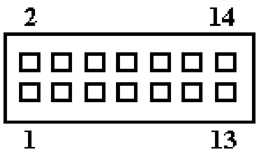
SPEED	MODE
ORANGE	1000 Mbps
GREEN	100 Mbps
OFF	10 Mbps

Audio Connectors

After install onboard audio driver, you may connect speaker to Line Out jack, microphone to MIC In jack.



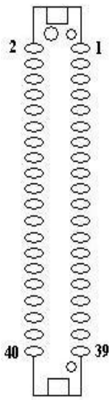
INT_AUDIO Connector



Pin #	Signal Name
1	LINE-IN-L
2	LINE-IN-R
3	GND
4	GND
5	LINEOUT-L
6	LINEOUT-R
7	GND
8	GND
9	MIC1-IN-L
10	MIC1-IN-R
11	LFE OUT
12	CENTER OUT
13	SURR OUTL
14	SURR OUTR

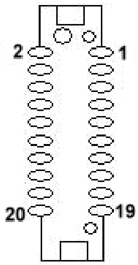
LVDS LCD Connector

The LCD panel, inverter for LCD LAMP, Touch-screen Serial Interface must be connected to this LVDS header, using the below described connector:



Signal Name	Pin #	Pin #	Signal Name
+12V	2	1	+12V
GND	4	3	GND
LCDVDD 5V/3.3V	6	5	LCDVDD 5V/3.3V
GND	8	7	GND
BCKLITE_ON	10	9	BRIGHTNES
LVDS_GND	12	11	LVDS_GND
CHB_TX0+	14	13	CHA_TX0+
CHB_TX0-	16	15	CHA_TX0-
LVDS_GND	18	17	LVDS_GND
CHB_TX1+	20	19	CHA_TX1+
CHB_TX1-	22	21	CHA_TX1-
LVDS_GND	24	23	LVDS_GND
CHB_TX2+	26	25	CHA_TX2+
CHB_TX2-	28	27	CHA_TX2-
LVDS_GND	30	29	LVDS_GND
CHB_TXC+	32	31	CHA_TXC+
CHB_TXC-	34	33	CHA_TXC-
LVDS_GND	36	35	LVDS_GND
CHB_TX3+	38	37	CHA_TX3+
CHB_TX3-	40	39	CHA_TX3-

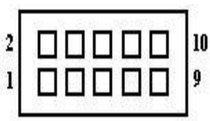
DVI Connector



Signal Name	Pin #	Pin #	Signal Name
TCLK+	2	1	TDC1+
TCLK-	4	3	TDC1-
GND	6	5	GND
TDC0+	8	7	TDC2+
TDC0-	10	9	TDC2-
GND	12	11	GND
NC	14	13	NC
CLOCK	16	15	DATA
DVI_PLUG	18	17	GND
VCC	20	19	VCC

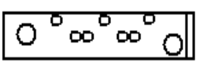
DIO Connector

DIO port supports 8 digital I/O bits. Each bit can be configured as Input or output individually. All bits are 5V tolerant.



Signal Name	Pin #	Pin #	Signal Name
GND	1	2	+5V
DIO_0	3	4	DIO_4
DIO_1	5	6	DIO_5
DIO_2	7	8	DIO_6
DIO_3	9	10	DIO_7

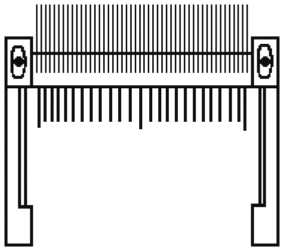
SATA1, SATA2 Connectors



1 7

Pin #	Signal Name
1	GND
2	SATATX+
3	SATATX-
4	GND
5	SATARX-
6	SATARX+
7	GND

CF-II Connector



Signal Name	Pin #	Pin #	Signal Name
GND	1	2	PDD3
PDD4	3	4	PDD5
PDD6	5	6	PDD7
PCS1-	7	8	GND
GND	9	10	GND
GND	11	12	GND
VCC	13	14	GND
GND	15	16	GND
GND	17	18	PDA2
PDA1	19	20	PDA0
PDD0	21	22	PDD1
PDD2	23	24	N.C.
N.C.	25	26	N.C.
PDD11	27	28	PDD12
PDD13	29	30	PDD14
PDD15	31	32	PCS3-
N.C.	33	34	PDIOR-
PDIOW-	35	36	VCC
IRQ14	37	38	VCC
MST#_SLV	39	40	N.C.
PST1-	41	42	PIORDY
PDDREQ	43	44	PDDACK-
CF_LED-	45	46	N.C.
PDD8	47	48	PDD9
PDD10	49	50	GND

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Chapter 3 BIOS Setup

This chapter describes the different settings available in the Award BIOS that comes with the M5 CPU card. The topics covered in this chapter are as follows:

3.1 MAIN MENU 41
3.2 STANDARD CMOS FEATURES 43
3.3 ADVANCED BIOS FEATURES 48
3.4 ADVANCED CHIPSET FEATURES 55
3.5 INTEGRATED PERIPHERALS 59
3.6 POWER MANAGEMENT SETUP 75
3.7 PNP/PCI CONFIGURATION 81
3.8 PC HEALTH STATUS 85
3.9 FREQUENCY/VOLTAGE CONTROL 87
3.10 LOAD FAIL-SAFE DEFAULTS 87
3.11 LOAD OPTIMIZED DEFAULTS 88
3.12 SET SUPERVISOR/ USER PASSWORD 88
3.13 SAVE & EXIT SETUP 90
3.14 EXIT WITHOUT SAVING 90

BIOS Introduction

This Chapter discusses Award™ Setup program built into the M5 BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.
The AwardBIOS™ installed in M5 is a custom version of an industry standard BIOS. This means that it supports Intel Core 2 Duo in a standard IBM-AT compatible input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.
It also adds non-standard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.
The rest of this chapter is intended to guide you through the process of configuring your system using Setup.

Starting Setup

The AwardBIOS™ is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing <Del> immediately after switching the system on, or

2. by pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you
do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Key	Function
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Left Arrow	Move to the item on the left (menu bar)
Right Arrow	Move to the item on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

Navigating through the menu bar

Use the left and right arrow keys to choose the menu you want to be in.

To display a sub menu
Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AwardBIOS™ supports an override to the CMOS settings which resets your system to its defaults.
The best advice is to only alter settings that you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and M5 manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

3.1 Main Menu

Phoenix-AwardBIOS CMOS Setup Utility	
▶ Standard CMOS Features	▶ Frequency/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advance Chipset Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP/PCI Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
Esc :Quit F10:Save & Exit Setup	↑ ↓ ← → : Select Item
Load Optimized Defaults	

(Figure 1)

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories.

➢Standard CMOS Features

Use this menu for basic system configuration.

➢ Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

➢ Advance Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

➢ Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

➢ Power Management Setup

Use this menu to specify your settings for power management.

➢ PnP/PCI Configurations

Use this menu to set up the PnP/PCI configuration.

➢ PC Health Status

Use this menu to display the CPU temperature, FAN speed and voltages.

➢ Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control.

➢ Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

➢ Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

➢ Set Supervisor/ User Password

Use this menu to set User and Supervisor Passwords.

➢ Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

➢ Exit Without Saving

Abandon all CMOS value changes and exit setup.

3.2 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <Pg Dn> keys to select the value you want in each item.

Phoenix-Award BIOS CMOS Setup Utility
Standard CMOS Features

Date (mm :dd: yy)	Mon, Apr 28 2008	Item Help
Time (hh: mm: ss)	15 : 35 : 35	
		Menu Level ►
►IDE Channel 0 Master	[None]	
►IDE Channel 0 Slave	[None]	Change the day,
►IDE Channel 1 Master	[None]	month, year, and
►IDE Channel 1 Slave	[None]	century
Drive A	[None]	
Drive B	[None]	
Video	[EGA/VGA]	
Halt On	[All , But Disk/Key]	
Base Memory	639K	
Extend Memory	1038336K	
Total Memory	1039360K	

↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit
F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default

(Figure 2)

This table shows the selections that you can make on the Standard CMOS Menu

Item	Options	Description
Date	Month DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the date
Time	HH : MM : SS	Set the system time
IDE Channel 0 Master	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Channel 0 Slave	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Channel 1 Master	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Channel 1 Slave	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

IDE Channel 0, 1 Master/ Slave

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive. Figure 3 shows the IDE Channel 0 / Channel 1 master sub menu.

Phoenix-Award BIOS CMOS Setup Utility
IDE Channel 0 Master

IDE HDD Auto-Detection	[Press Enter]	Item Help
IDE Channel 0 Master	[Auto]	Menu Level ▶
Access Mode	[Auto]	
		To auto-detect the HDD's size, head…on this channel
Capacity	0 MB	
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help
F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default

(Figure 3)

Use the legend keys to navigate through this menu and exit to the main menu. Use the Table listed below to configure the hard disk**.**

Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Channel 0 Master	None Auto Manual	Selecting ‘manual’ lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !
Access Mode	CHS LBA Large Auto	Choose the access mode for this hard disk
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.
The following options are selectable only if the ‘IDE Channel 0 Master’ item is set to ‘Manual’		
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

Drive A/B

These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

None**(default)**	360K	1.2M	720K	1.44M	2.88M
	5.25 in.	5.25 in.	3.5 in.	3.5 in.	3.5 in.

Video

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA: For EGA, VGA, SEGA, SVGA or PGA monitor adapters. **(default)**

CGA 40: Power up in 40 column mode.

CGA 80: Power up in 80 column mode.

MONO: For Hercules or MDA adapters.

Halt On

This field determines whether the system will halt if an error is detected during power up.

All errors	Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted.
No errors	The system boot will not be halted for any error that may be detected.
All, But Keyboard	The system boot will not be halted for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not be halted for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not be halted for a key-board or disk error; it will stop for all others. **(default)**

3.3 Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

Phoenix-Award BIOS CMOS Setup Utility Advanced BIOS Features		
▶ CPU Features	[Press Enter]	Item Help
▶ Hard Disk Boot Priority	[Press Enter]	
Virus Warning	[Disabled]	Menu Level ▶
CPU L1 & L2 Cache	[Enabled]	
CPU L3 Cache	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Hard Disk]	
Second Boot Device	[CDROM]	
Third Boot Device	[LS120]	
Boot Other Device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Enabled]	
Boot UP Num Lock Status	[Off]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	[Setup]	
x APIC Mode	Enabled	
MPS Version Control For OS	[1.4]	
OS Select For DRAM > 64MB	[Non-OS2]	
Report No FDD For WIN 95	[No]	
↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure 4)

➢CPU Feature

Phoenix-Award BIOS CMOS Setup Utility CPU Feature		
Delay Prior to Thermal Limit CPUID MaxVal C1E Function Execute Disabled Bit	[16 Min] [Disabled] [Auto] [Enabled]	Item Help Menu Level ▶
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure 5)

Delay Prior to Thermal

Delay Prior To Thermal is set at 16 minutes as default, which means the board will wait 16 minutes before it activates the processor's integrated thermal control circuit.

The choice: 4 Min , 8 Min, 16 Min **(default)**, 32 Min.

Limit CPUID Max Val

The choice: Enabled, Disabled **(default).**

C1E Function

The choice: Auto **(default)**, Disabled

Execute Disabled Bit

The choice: Enabled **(default)**, Disabled

➢Hard Disk Boot Priority

Phoenix-Award BIOS CMOS Setup Utility
Hard Disk Boot Priority

1.Bootable Add-in Cards	Item Help Menu Level ▶ Use <↑> or <↓> to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.

↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit
F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default

(Figure 6)

Bootable Add-in Cards

This is for setting the priority of the hard disk boot order when the "Hard Disk" option is selected in the "[First/Second/Third] Boot Device "menu item.

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection.
If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table. **(default)**

CPU L1 & L2 Cache

These two categories speed up memory access.
However, it depends on CPU/chipset design.

Enabled	Enable cache**(default)**
Disabled	Disable cache

CPU L3 Cache

This field is used to enable or disable the CPU's L3 cache.
The choice: Enabled **(default)**, Disabled.

Quick Power On Self Test

Allows the system to skip certain tests while booting.
This will decrease the time needed to boot the system.

Enabled	Enable quick POST**(default)**
Disabled	Normal POST

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.
The Choice: Floppy, LS120, Hard-Disk, ZIP100, CDROM, Disabled, USB-FDD, USB-ZIP, USB-CDROM, Legacy LAN.

Item	**Default**
First Boot Device	Hard-Disk
Second Boot Device	CDROM
Third Boot Device	LS120

Boot Other Device

When enabled, BIOS will try to load the operating system from other device when it failed to load from the three devices above.
The choice: Enabled **(default)**, Disabled.

Swap Floppy Drive

If the system has two floppy drives, choose "Enabled" to assign physical drive B to logical drive A and vice-versa.
The choice: Enabled, Disabled **(default)**.

Boot Up Floppy Seek

Selection of the command .Disabled. will speed the boot up.
Selection of .Enabled. Searches disk drives during boot up.
The choice: Enabled **(default)**, Disabled

Boot Up Num Lock Status

Selects power on state for Num Lock.
The choice: On, Off **(default)**.

Gate A20 Option

The choice:
Normal: A pin in the keyboard controller controls GateA20.
Fast **(default)**: Lets chipset control GateA20.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.
The choice: Enabled, Disabled **(default)**.

If Typematic Rate Setting is [Enabled], can choice Rate and Delay:

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a keystroke when you hold the key down.
The choice: 6 **(default)**, 8, 10, 12, 15, 20, 24, 30

```
Typematic Rate (Chars/Sec)

6          ..... [■]
8          ..... [ ]
10         ..... [ ]
12         ..... [ ]
15         ..... [ ]
20         ..... [ ]
24         ..... [ ]
30         ..... [ ]

↑↓: Move Enter: Accept  ESC:Abort
```

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.
The choice: 250 **(default)**, 500, 750, and 1000.

```
Typematic Delay (Msec)

250          ..... [■]
500          ..... [ ]
750          ..... [ ]
1000         ..... [ ]

↑↓: Move Enter: Accept ESC: Abort
```

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. **(default)**

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

APIC Mode

This setting allows to enable the APIC mode.
The choice: Enabled **(default)**, Disabled

MPS Version Control For OS

The BIOS supports version 1.1 and 1.4 of the Intel multiprocessor specification.
Select version supported by the operation system running on this computer.
The choice: 1.1, 1.4 **(default)**.

OS Select For DRAM > 64MB

Select OS2 only if you are running OS/2 operating system with greater than 64MB of RAM on the system.
The choice: Non-OS2 **(default)**, OS2.

Report No FDD For WIN 95

The choice: No **(default)**, Yes.

3.4 Advanced Chipset Features

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

Phoenix-Award BIOS CMOS Setup Utility
Advanced Chipset Features

	DRAM Timing Selectable	[By SPD]	Item Help
x	CAS Latency Time	[Auto]	
x	Dram RAS# to CAS# Delay	[Auto]	Menu Level ▶
x	DRAM RAS# Precharge	[Auto]	
x	Precharge dealy (tRAS)	[Auto]	
x	System Memory Frequency	[Auto]	
	SLP_S4#Assertoin Width	[4 to 5 Sec]	
	System BIOS Cacheable	[Enabled]	
	Video BIOS Cacheable	[Disabled]	
	Memory Hole At 15M-16M	[Disabled]	
	VGA Setting		
	On-Chip Frame Buffer Size	[8MB]	
	DVMT Mode	[DVMT]	
	DVMT / FIXED Memory Size	[128MB]	
	Boot Display	[CRT+LFP]	
	Panel Number	[3]	
	TV Standard	[Off]	
	Video Connector	[Automatic]	
	TV Format	[Auto]	
	Lan1 Chip Control	[Enabled]	
	Lan2 Chip Control	[Enabled]	

↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default

(Figure 7)

DRAM Timing Selectable

The choice: Manual, By SPD **(default)**.

If DRAM Timing Selectable is [Manual], can choice these Items:

►CAS Latency Time
►Dram RAS# to CAS# Delay
►DRAM RAS# Precharge
►Precharge dealy (tRAS)
►System Memory Frequency

CAS Latency Time

This controls the latency between DDR RAM read command and the time that the data actually becomes available.
Leave this on the default setting.
The choice: 5, 4, 3, 6, Auto **(default)**.

DRAM RAS# to CAS# Delay

In order to improve performance, certain space in memory is reserved for PISA cards.
This memory must be mapped into the memory space below 16MB.
The choice: 2, 3, 4, 5, 6, Auto **(default)**.

DRAM RAS# Precharge

This controls the idle clocks after issuing a precharge command to DRAM.
Leave this on the default setting.
The choice: Auto **(default)**, 2, 3,4,5,6.

Precharge dealy (tRAS)

The choice: Auto **(default)**, 4,5,6,7,8,9,10,11,12,13,14,15.

System Memory Frequency

The choice: Auto **(default)**, 533MHz, 667MHz

SLP_S4#Assertoin Width

Set SLP_S4# pin.
The choice: 4 to5 Sec **(default)**, 3 to 4Sec, 2to 3Sec, 1to2Sec.

System BIOS Cacheable

Selecting the “Enabled” option allows caching of the system BIOS ROM at F0000h-FFFFFh, which is able to improve the system performance. However, any programs that attempts to write to this memory block will cause conflicts and result in system errors.
The choice: Enabled (**default)**, Disabled.

Video BIOS Cacheable

Selecting Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may occur.
The choice: Enabled, Disabled **(default)**

Memory Hole At 15M-16M

Enabling this feature reserves 15 MB to 16 MB memory address space for ISA expansion cards that specifically require this setting. This makes memory from 15 MB and up unavailable to the system. Expansion cards can only access memory up to 16 MB.
The choice: Enabled, Disabled **(default)**

On-Chip Frame Buffer Size

User can select frame buffer size.
The choice: 1MB, 8MB **(default)**.

DVMT Mode

This field shows the current DVMT mode.
The choice: FIXED, DVMT **(default)**, BOTH

DVMT / FIXED Memory Size

This field is used to select the graphics memory size used by DVMT/ Fixed mode.
The choice: 64MB, 128MB **(default)**, 224MB

Boot Display

This field is used to select the type of display to use when the system boots.
The choice:

Auto	CRT	TV	EFP
LFP	CRT+LFP **(default)**	EFP+LFP	

Panel Number

The choice: 1,2,3 **(default)**,4,5,6,7,8,9,10,11,12,13,14,15,16

TV Standard

The choice: Off **(default)**, NTSC, PAL, SECAM.

Video Connector

The choice: Automatic **(default)**, Composite, Component, Both.

TV Format

The choice:

Auto**(default)**	NTSC_M	NTSC_M_J
NTSC_433	NTSC_N	PAL_B
PAL_G	PAL_D	PAL_H
PAL_I	PAL_M	PAL_N
PAL_60	SECAM_L	SECAM_L1
SECAN_B	SECAN_D	SECAN_G
SECAN_H	SECAN_K	SECAN_K1

Lan1 Chip Control

The choice: Enabled **(default)**, Disabled.

Lan2 Chip Control

The choice: Enabled **(default)**, Disabled.

3.5 Integrated Peripherals

Phoenix-Award BIOS CMOS Setup Utility Integrated Peripherals		
▶ On Chip IDE Device	[Press Enter]	Item Help
▶ Onboard Device	[Press Enter]	
▶ Super IO Device	[Press Enter]	Menu Level ▶
Onboard Serial Port 3	[3E8]	
Serial Port 3 Use IRQ	[IRQ3]	
Onboard Serial Port 4	[2E8]	
Serial Port 4 Use IRQ	[IRQ4]	
Onboard Serial Port 5	[4F8]	
Serial Port 5 Use IRQ	[IRQ5]	
Onboard Serial Port 6	[4E8]	
Serial Port 6 Use IRQ	[IRQ7]	
Watch Dog Timer Select	[Disabled]	
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure 8)

➢On Chip IDE Device

Phoenix-Award BIOS CMOS Setup Utility On Chip IDE Device		
IDE HDD Block Mode	[Enabled]	Item Help
On-Chip Primary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	Menu Level ►
IDE Primary Slave PIO	[Auto]	If your IDE hard
IDE Primary Master UDMA	[Auto]	drive suppers
IDE Primary Slave UDMA	[Auto]	block mode
On-Chip Secondary PCI IDE	[Enabled]	select Enabled
IDE Secondary Master PIO	[Auto]	for automatic
IDE Secondary Slave PIO	[Auto]	detection of the
IDE Secondary Master UDMA	[Auto]	optimal number
IDE Secondary Slave UDMA	[Auto]	of lock
		read/writes per
*** On-Chip Serial ATA Setting***		sector the drive
x SATA Mode	IDE	can support
On-Chip Serial ATA	[Auto]	
x SATA PORT Speed Settings	Disable	
x PATA IDE Mode	Secondary	
x SATA Port	PO, P2 is Primary	
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure 9)

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sectors read / write.

If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block mode (most new drives do), select

Enabled for automatic detection of the optimal number of block read /write per sector where the drive can support.

The choice: Enabled **(default)**, Disabled

On-Chip Primary PCI IDE

This field allows you to enable or disable the primary and secondary IDE controller.
Select disabled if you want to add a different hard drive controller.
The choice: Enabled **(default)**, Disabled

IDE Primary/Secondary, Master/Slave PIO

The choice: Auto **(default)**, Mode0, Mode1, Mode2, Mode3, Mode4

Caution: Do not use the wrong setting or you will have drive errors

PIO means Programmed Input/output.
Rather than have the BIOS issue a series of commands to effect a transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by themselves.
Your system supports five modes, 0 (default) to 4, which primarily differ in timing.
When Auto is selected, the BIOS will select the best available mode after checking your drive.

Auto	The BIOS will automatically set the system according to your hard disk drive's timing **(default)**.
Mode 0-4	You can select a mode that matches your hard disk drive's timing.

IDE Primary/Secondary, Master/ Slave UDMA

The choice: Disabled, Auto **(default)**

On-Chip Secondary PCI IDE

These fields allow you to enable or disable the primary and secondary IDE controller.
Select disabled if you want to add a different hard drive controller.
The choice: Enabled **(default)**, Disabled.

On-Chip Serial ATA

Choose the status of serial ATA, the default setting is "**Auto**" which let system to arrange all parallel and serial ATA resource automatically.

Disabled	Will disable SATA controller. **(Figure11)**
Combined Mode	Will combine PATA and SATA, and max of 2 IDE drives in each channel. **(Figure 12)**
Enhanced Mode	Will enable both SATA and PATA, and max of 6 IDE drives is supported. **(Figure 13)**
SATA Only	Means SATA is operating in legacy mode.**(Figure 14)**
Auto	This is the default setting.

The choice: Disabled, Auto **(default)**, Combined Mode, Enhanced Mode, SATA Only.

Phoenix-Award BIOS CMOS Setup Utility
On Chip IDE Device

IDE HDD Block Mode [Enabled]
On-Chip Primary PCI IDE [Enabled]
IDE Primary Master PIO [Auto]
IDE Primary Slave PIO [Auto]
IDE Prima
IDE Prima
On-Chip Se
IDE Secon
IDE Secon
IDE Secon
IDE Secon

*** On-Chip
x SATA Mod
On-Chip Serial ATA [Auto]
x SATA PORT Speed Settings Disable
x PATA IDE Mode Secondary
x SATA Port PO, P2 is Primary

On-Chip Serial ATA

Disabled ..... [ ]
Auto ..... [█]
Combined Mode ..... [ ]
Enhanced Mode ..... [ ]
SATA Only ..... [ ]

↑↓: Move Enter: Accept ESC:Abort

Item Help

Menu Level ▶
If your IDE hard drive suppers block mode select Enabled for automatic detection of the optimal number of lock read/writes per sector the drive can support

↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default

(Figure 10)

When you press [Disabled] or [Auto] on this item will show:
[Auto] is the default choice.

Phoenix-Award BIOS CMOS Setup Utility On Chip IDE Device		
IDE HDD Block Mode	[Enabled]	Item Help
On-Chip Primary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	Menu Level ▶
IDE Primary Slave PIO	[Auto]	If your IDE hard
IDE Primary Master UDMA	[Auto]	drive suppers
IDE Primary Slave UDMA	[Auto]	block mode
On-Chip Secondary PCI IDE	[Enabled]	select Enabled
IDE Secondary Master PIO	[Auto]	for automatic
IDE Secondary Slave PIO	[Auto]	detection of the
IDE Secondary Master UDMA	[Auto]	optimal number
IDE Secondary Slave UDMA	[Auto]	of lock
		read/writes per
*** On-Chip Serial ATA Setting***		sector the drive
x SATA Mode	IDE	can support
On-Chip Serial ATA	[Auto]	
x SATA PORT Speed Settings	Disable	
x PATA IDE Mode	Secondary	
x SATA Port	PO, P2 is Primary	
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure11)

When you press [Combined Mode] on this item will show:

Phoenix-Award BIOS CMOS Setup Utility On Chip IDE Device		
IDE HDD Block Mode	[Enabled]	Item Help
On-Chip Primary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	Menu Level ▶
IDE Primary Slave PIO	[Auto]	If your IDE hard drive suppers block mode select Enabled for automatic detection of the optimal number of lock read/writes per sector the drive can support
IDE Primary Master UDMA	[Auto]	
IDE Primary Slave UDMA	[Auto]	
On-Chip Secondary PCI IDE	[Enabled]	
IDE Secondary Master PIO	[Auto]	
IDE Secondary Slave PIO	[Auto]	
IDE Secondary Master UDMA	[Auto]	
IDE Secondary Slave UDMA	[Auto]	
*** On-Chip Serial ATA Setting***		
SATA Mode	[IDE]	
On-Chip Serial ATA	[Combined Mode]	
x SATA PORT Speed Settings	Disable	
PATA IDE Mode	[Secondary]	
x SATA Port	PO, P2 is Primary	
↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure12)

SATA Mode

Controls the SATA controller's operating mode.
The choice: IDE **(default)**, RAID, AHCI.

PATA IDE Mode

This field is used to select the function mode of the IDE connector.
The only choice:
Secondary: IDE serves as Secondary Master and Secondary Slave channel. SATA 1 and SATA 2 serve as Primary Master and Primary Slave channel.

When you press [Enhanced Mode] on this item will show:

Phoenix-Award BIOS CMOS Setup Utility On Chip IDE Device		
IDE HDD Block Mode	[Enabled]	Item Help
On-Chip Primary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	Menu Level ▶
IDE Primary Slave PIO	[Auto]	If your IDE hard
IDE Primary Master UDMA	[Auto]	drive suppers
IDE Primary Slave UDMA	[Auto]	block mode
On-Chip Secondary PCI IDE	[Enabled]	select Enabled
IDE Secondary Master PIO	[Auto]	for automatic
IDE Secondary Slave PIO	[Auto]	detection of the
IDE Secondary Master UDMA	[Auto]	optimal number
IDE Secondary Slave UDMA	[Auto]	of lock
		read/writes per
*** On-Chip Serial ATA Setting***		sector the drive
SATA Mode	[IDE]	can support
On-Chip Serial ATA	[Enhanced Mode]	
SATA PORT Speed Settings	[Disable]	
x PATA IDE Mode	Secondary	
x SATA Port	PO, P2 is Primary	
↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure13)

SATA Mode

Controls the SATA controller's operating mode.
The choice: IDE **(default)**, RAID, AHCI.

SATA Port Speed Settings

Select SATA speed.
The choice: Disabled **(default)**, Force GEN I, Force GEN II.

When you press [SATA Only] on this item will show:

Phoenix-Award BIOS CMOS Setup Utility On Chip IDE Device		
IDE HDD Block Mode	[Enabled]	Item Help
On-Chip Primary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	Menu Level ▶
IDE Primary Slave PIO	[Auto]	If your IDE hard
IDE Primary Master UDMA	[Auto]	drive suppers
IDE Primary Slave UDMA	[Auto]	block mode
On-Chip Secondary PCI IDE	[Enabled]	select Enabled
IDE Secondary Master PIO	[Auto]	for automatic
IDE Secondary Slave PIO	[Auto]	detection of the
IDE Secondary Master UDMA	[Auto]	optimal number
IDE Secondary Slave UDMA	[Auto]	of lock
		read/writes per
*** On-Chip Serial ATA Setting***		sector the drive
SATA Mode	[IDE]	can support
On-Chip Serial ATA	[SATA Only]	
x SATA PORT Speed Settings	Disable	
x PATA IDE Mode	Secondary	
x SATA Port	PO, P2 is Primary	
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure14)

SATA Mode

Controls the SATA controller's operating mode.

The choice: IDE **(default)**, RAID, AHCI.

➢On board Device

Phoenix-Award BIOS CMOS Setup Utility Onboard Device		
USB Controller	[Enabled]	Item Help
USB 2.0 Controller	[Enabled]	
USB Keyboard Support	[Disabled]	Menu Level ▶
Azalia/AC97 Audio Select	[Auto]	
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

USB Controller

Select enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.
The choice: Enabled **(default)**, Disabled.

USB 2.0 Controller

This entry is for disable/enable USB2.0 controller only. The BIOS itself may/may not have high speed USB support.
If the BIOS has high speed USB support built in, the support will be automatically turn on when high speed device were attached.
The choice: Enabled **(default)**, Disabled

USB Keyboard Support

Select enabled if user plan to use an USB keyboard.
The choice: Enabled, Disabled **(default)**.

Azalia/AC97 Audio Select

The choice: Auto **(default)**, Azalia, AC97 Audio and Modem, AC97 Audio only, AC97 Modem only, ALL Disabled.

➢Super IO Device

Phoenix-Award BIOS CMOS Setup Utility Super IO Device		
Onboard Serial Port 1	[3F8/IRQ4]	Item Help
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	Menu Level ▶
x RxD , TxD Active	Hi, Lo	
x IR Transmission Delay	Enabled	
x UR2 Duplex Mode	Half	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x EPP Mode Select	EPP1.7	
x ECP Mode Use DMA	3	
PWRON After PWR-Fail	[Off]	
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

Onboard Serial Port 1

Select an address and corresponding interrupt for the first serial ports.
The choice: Disable, 3F8/IRQ4 **(default)**, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto.

Onboard Serial Port 2

Select an address and corresponding interrupt for the second serial ports.
The choice: Disable, 3F8/IRQ4, 2F8/IRQ3 **(default)**, 3E8/IRQ4, 2E8/IRQ3, Auto.

UART Mode Select

This item allows you to select which mode for the Onboard Serial Port 2.

The choice: IrDA, ASKIR, Normal **(default)**

If UART Mode Select is IrDA and ASKIR will show:

Phoenix-Award BIOS CMOS Setup Utility Super IO Device		
Onboard Serial Port 1	[3F8/IRQ4]	Item Help
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[IrDA]	Menu Level ►
RxD , TxD Active	[Hi, Lo]	
IR Transmission Delay	[Enabled]	
UR2 Duplex Mode	[Half]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x EPP Mode Select	EPP1.7	
x ECP Mode Use DMA	3	
PWRON After PWR-Fail	[Off]	
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

RxD, TxD Active

The choice:

UART Mode Select
Hi, Hi ……[ ] Hi, Lo ……[ ] Lo, Hi …..[ ] Lo, Lo …..[ ]
↑↓: Move Enter: Accept ESC: Abort

IR Transmission Delay

The choice: Disabled, Enabled **(default)**.

UR2 Duplex Mode

The choice: Full, Half **(default)**.

Onboard Parallel Port

This item allows you to determine onboard parallel port controller I/O address setting.

The choice: 378/IRQ7 **(default)**, 278/IRQ5, 3BC/IRQ7, Disabled.

Parallel Port Mode

The choice: SPP **(default)**, EPP, ECP, ECP+EPP, Normal.

SPP	Sets the parallel port to function as a Standard Parallel Port. This is the default (and slowest) option.
EPP	Sets the parallel port to Enhanced Parallel Port mode. Sometimes also called "Bi-directional"
ECP	Sets the parallel port up as an Enhanced Capabilities Port. This setting requires the use of a DMA channel

If Parallel Port Mode Select is [SPP] and [Normal] will show:

Phoenix-Award BIOS CMOS Setup Utility Super IO Device		
Onboard Serial Port 1	[3F8/IRQ4]	Item Help
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[IrDA]	Menu Level ▶
RxD , TxD Active	[Hi, Lo]	
IR Transmission Delay	[Enabled]	
UR2 Duplex Mode	[Half]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x EPP Mode Select	EPP1.7	
x ECP Mode Use DMA	3	
PWRON After PWR-Fail	[Off]	
↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

If Parallel Port Mode Select is [EPP] will show:

Phoenix-Award BIOS CMOS Setup Utility Super IO Device		
Onboard Serial Port 1	[3F8/IRQ4]	Item Help
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[IrDA]	Menu Level ▶
RxD , TxD Active	[Hi, Lo]	
IR Transmission Delay	[Enabled]	
UR2 Duplex Mode	[Half]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[EPP]	
EPP Mode Select	[1.7]	
x ECP Mode Use DMA	3	
PWRON After PWR-Fail	[Off]	
↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

EPP Mode Select

Select EPP port type 1.7 or 1.9.

The choice: 1.7 **(default)**, 1.9.

If Parallel Port Mode Select is [ECP] will show:

Phoenix-Award BIOS CMOS Setup Utility Super IO Device		
Onboard Serial Port 1	[3F8/IRQ4]	Item Help
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[IrDA]	Menu Level ▶
RxD , TxD Active	[Hi, Lo]	
IR Transmission Delay	[Enabled]	
UR2 Duplex Mode	[Half]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[ECP]	
x EPP Mode Select	1.7	
ECP Mode Use DMA	[3]	
PWRON After PWR-Fail	[Off]	
↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

ECP Mode Use DMA

If your system supports ECP parallel port mode and you have the port set to use ECP, you must use this setting to assign a DMA channel for use by the port.

The choice: DMA1, DMA3 **(default)**.

If Parallel Port Mode Select is [ECP+EPP] will show:

Phoenix-Award BIOS CMOS Setup Utility Super IO Device		
Onboard Serial Port 1	[3F8/IRQ4]	Item Help
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[IrDA]	Menu Level ▶
RxD , TxD Active	[Hi, Lo]	
IR Transmission Delay	[Enabled]	
UR2 Duplex Mode	[Half]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[ECP+EPP]	
EPP Mode Select	[1.7]	
ECP Mode Use DMA	[3]	
PWRON After PWR-Fail	[Off]	
↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

EPP Mode Select

Select EPP port type 1.7 or 1.9.
The choice: 1.7 **(default)**, 1.9.

ECP Mode Use DMA

If your system supports ECP parallel port mode and you have the port set to use ECP, you must use this setting to assign a DMA channel for use by the port.
The choice: DMA1, DMA3 **(default)**.

PWRON After PWR-Fail

When power fails, you can select power ON or Off or Former status.
The choice: Off **(default)**, On, Former-Sts.

Onboard Serial Port 3

This is used to select an I/O address for the onboard serial port 3.
The choice: Disabled, 3F8, 2F8, 3E8 **(default)**, 2E8

Serial Port 3 Use IRQ

This is used to select an IRQ for the onboard serial port 3.
The choice: IRQ3 **(default)**, IRQ4, IRQ5, IRQ7, IRQ10, IRQ11.

Onboard Serial Port 4

This is used to select an I/O address for the onboard serial port 4.
The choice: Disabled, 3F8, 2F8, 3E8, 2E8 **(default).**

Serial Port 4 Use IRQ

This is used to select an IRQ for the onboard serial port 4.
The choice: IRQ3, IRQ4 **(default)**, IRQ5, IRQ7, IRQ10, IRQ11.

Onboard Serial Port 5

This is used to select an I/O address for the onboard serial port 5
The choice: Disabled, 4F8 **(default)**, 4E8**.**

Serial Port 5 Use IRQ

This is used to select an IRQ for the onboard serial port 5.
The choice: IRQ3, IRQ4, IRQ5 **(default)**, IRQ7, IRQ10, IRQ11.

Onboard Serial Port 6

This is used to select an I/O address for the onboard serial port 6.
The choice: Disabled, 4F8, 4E8 **(default).**

Serial Port 6 Use IRQ

This is used to select an IRQ for the onboard serial port 6.
The choice: IRQ3, IRQ4, IRQ5, IRQ7 **(default)**, IRQ10, IRQ11

Watch Dog Timer Select

The choice: Disabled **(default)**, Enable

3.6 Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.

Phoenix-Award BIOS CMOS Setup Utility
Power Management Setup

► PCI Express PM Function	[Press Enter]	Item Help
Power-Supply Type	[AT]	
ACPI Function	[Enabled]	Menu Level ►
Power Management	[User Define]	
Video Off Method	[DPMS]	
Video Off In Suspend	[Yes]	
Suspend Type	[Stop Grant]	
MODEM Use IRQ	[3]	
Suspend Mode	[Disabled]	
HDD Power Down	[Disabled]	
Soft-Off by PWR-BTTN	[Instant-Off]	
CPU THRM-Throttling	[50.0%]	
Wake-Up by PCI card	[Enabled]	
Power On by Ring	[Enabled]	
Resume by Alarm	[Disabled]	
x Data(of Month)Alarm	0	
x Time(hh: mm: ss)Alarm	0 : 0 : 0	
Reload Global Timer Events		
Primary IDE 0	[Disabled]	
Primary IDE 1	[Disabled]	
Secondary IDE 0	[Disabled]	
Secondary IDE 1	[Disabled]	
FDD , COM , LPT Port	[Disabled]	
PCI PIRQ[A-D]#	[Disabled]	

↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default

➢PCI Express PM Function

Phoenix-Award BIOS CMOS Setup Utility PCI Express PM Function		
PCI Express PME	[Enabled]	Item Help Menu Level ▶
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

PCI Express PME

The choice: Enabled **(default)**, Disabled.

Power-Supply Type

The choice: AT **(default)**, ATX

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).
The choice: Enabled **(default)**, Disabled.

Power Management

The choice: User Define **(default)**, Min Saving, Max Saving.

Max Saving	Maximum power savings. Only Available for SL CPUs. Inactivity period is 1 minute in each mode.
User Define	Set each mode individually. Select time-out periods in the section for each mode, below.
Min Saving	Minimum power savings. Inactivity period is 1 hour in each mode (except the hard drive).

Video off Method

This determines the manner in which the monitor is blanked.
This specifies the power saving state that the VGA video subsystem enters after the specified period of display inactivity has expired.
The choice: Blank Screen, V/H SYNC+ Blank, DPMS **(default).**

Blank Screen	The BIOS will only black the screen when the system gets into power management mode and writes blanks to the video buffer.
V/H SYNC + Blank	Writes blanks to the video buffer, and turns off the vertical and horizontal scanning.
DPMS	Allows the BIOS to control the video display card if it supports the DPMS feature **(default).**

Video Off In Suspend

This field is used to activate the video off feature when the system enters the Suspend mode.
The choice: No, Yes **(default)**.

Suspend Type

The choice: Stop Grant **(default)**,PwrOn Suspend

MODEM Use IRQ

This field is used to set an IRQ channel for the modem installed in your system.
The choice: NA, 3 **(default)**, 4, 5, 7, 9, 10, 11.

Suspend Mode

This field specifies the length of time of system inactivity while in full power on state before the computer enters suspend mode and motivates the enable 'Wake up Events in Doze & Standby' / 'PM Events'.
The choice: 1Min, 2Min, 4Min, 8Min, 12Min, 20Min, 30Min, 40Min,1Hour, Disable **(default)**.

HDD Power Down

When enable and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.
The choice: 1Min, 2Min, 3Min, 4Min, 5Min, 6Min, 7Min, 8Min, 9Min, 10Min, 11Min, 12Min, 13Min, 14Min, 15Min, Disable **(default)**.

Soft-Off by PWR-BTTN

This field defines the power off mode when using an ATX power supply.
The choice: Instant-Off, Delay 4 Sec.

Instant-Off	Press power button then Power off instantly .**(default)**
Delay 4 Sec	Press power button 4 sec. to Power off. Enter suspend if button is pressed less than 4 sec.

CPU THRM-Throttling

This field allows you to select the CPU THRM-Throttling rate.
The choice: 75.0%, 50.0% **(default)**, 25.0%.

Wake-Up by PCI card

Enable/Disable PCI PME wake up function.
The choice: Enabled **(default)**, Disabled.

Power On by Ring

Enable/Disable Power On By Ring function.
The choice: Enabled **(default)**, Disabled.

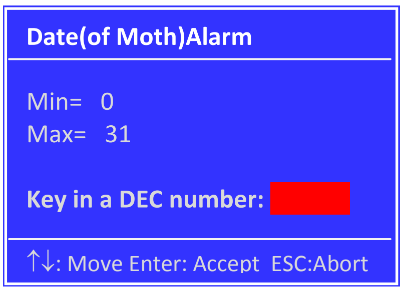
Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in Date/time to power on system.
The choice: Enabled, Disabled **(default)**

If Resume by Alarm is [Enabled], can choice Date Alarm and Time Alarm:

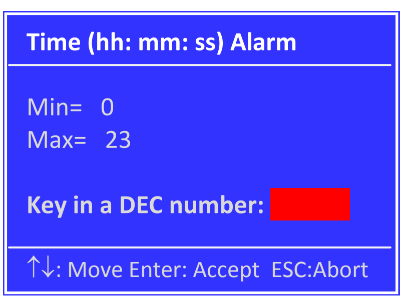
Date (of Month) Alarm

Every day, 1~31



Time (hh: mm: ss) Alarm

(0~23): (0~59): (0~59)



Primary/ Secondary IDE 0/1

When Enabled, the system will resume from suspend mode if Primary IDE 0 (1) or Secondary IDE 0 (1) is active.
The choice: Enabled, Disabled **(default)**

FDD, COM, LPT Port

When Enabled, the system will resume from suspend mode if FDD, COM port, or LPT port is active.
The choice: Enabled, Disabled **(default)**.

PCI PIRQ [A-D]

When Enabled, the system will resume from suspend mode if interrupt occurs.
The choice: Enabled, Disabled **(default)**.

3.7 PnP/PCI Configuration

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

Phoenix-Award BIOS CMOS Setup Utility PnP/PCI Configuration		
Init Display First	[PCI Slot]	Item Help
Reset Configuration Data	[Disabled]	
		Menu Level ▶
Resources Controlled By	[Auto(ESCD)]	
x IRQ Resources	Press Enter	
PCI/VGA Palette Snoop	[Disabled]	
INT Pin 1 Assignment	[Auto]	
INT Pin 2 Assignment	[Auto]	
INT Pin 3Assignment	[Auto]	
INT Pin 4 Assignment	[Auto]	
INT Pin 5 Assignment	[Auto]	
INT Pin 6 Assignment	[Auto]	
INT Pin 7 Assignment	[Auto]	
INT Pin 8 Assignment	[Auto]	
PCI Express relative items		
Maximum Payload Size	[4096]	
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

Init Display First

This item allows you to choose which one to activate first, PCI Slot or onchip VGA.

The choice: PCI Slot **(default)**, Onboard, PCIEx.

Reset Configuration Data

Default is disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot.
The choice: Enabled, Disabled **(default)**.

Resources Controlled By

BIOS can automatically configure all the boot and Plug and Play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, since BIOS automatically assigns them.
The choice: Auto (ESCD) **(default)**, Manual.

If Resources Controlled By is [Manual], can choice IRQ Resource:

Phoenix-Award BIOS CMOS Setup Utility
PnP/PCI Configuration

Init Display First	[PCI Slot]	Item Help
Reset Configuration Data	[Disabled]	
		Menu Level ▶
Resources Controlled By	[Manual]	
▶ IRQ Resources	[Press Enter]	
PCI/VGA Palette Snoop	[Disabled]	
INT Pin 1 Assignment	[Auto]	
INT Pin 2 Assignment	[Auto]	
INT Pin 3Assignment	[Auto]	
INT Pin 4 Assignment	[Auto]	
INT Pin 5 Assignment	[Auto]	
INT Pin 6 Assignment	[Auto]	
INT Pin 7 Assignment	[Auto]	
INT Pin 8 Assignment	[Auto]	
PCI Express relative items		
Maximum Payload Size	[4096]	

↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help
F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default

➢IRQ Resource

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt. This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot.

Phoenix-Award BIOS CMOS Setup Utility
IRQ Resource

IRQ-3 assigned to	[PCI Device]	Item Help
IRQ-4 assigned to	[PCI Device]	
IRQ-5 assigned to	[PCI Device]	Menu Level ▶
IRQ-7 assigned to	[PCI Device]	Legacy ISA for
IRQ-9 assigned to	[PCI Device]	devices compliant
IRQ-10 assigned to	[PCI Device]	with the original PC
IRQ-11 assigned to	[PCI Device]	AT bus specification,
IRQ-12 assigned to	[PCI Device]	PCI/ISA PnP for
IRQ-14 assigned to	[PCI Device]	devices compliant
IRQ-15 assigned to	[PCI Device]	with the Plug and
		Play standard
		whether designed for
		PCI or ISA bus
		architecture

↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help
F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default

IRQ-3,4,5,7,9,10,11,12,14,15 assigned to

IRQ-3 assigned to

PCI Device	..... [█]
Reserved	..... [ ]

↑↓: Move Enter: Accept ESC:Abort

The choice: PCI Device, Reserved.

PCI/VGA Palette Snoop

This BIOS feature determines if your graphics card should allow VGA palette snooping by a fixed function display card.
The choice: Enabled, Disabled **(default).**

INT Pin 1/2/3/4/5/6/7/8 Assignment

The choice: Auto **(default)**,3,4,5,7,9,10,11,12,14,15.

Maximum Payload Size

The choice: 128 (**default)**, 256,512,1024,2048,4096.

3.8 PC Health Status

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact with your motherboard supplier to get proper value about your setting of the CPU temperature.

Phoenix-Award BIOS CMOS Setup Utility PC Health Status		
CPU Warning Temperature	[Disabled]	Item Help
Current System Temp.	40°C / 107°F	
Current CPU Temperature:	40°C / 100°F	Menu Level ▶
CPU FAN Speed	0 RPM	
CHASSIS Fan Speed	7670 RPM	
Vcore	1.20V	
+1.5V	1.52V	
+3.3V	3.47V	
+5V	5.16V	
+12V	12.22V	
-12V	-12.44V	
VBAT(V)	3.32V	
5VSB(V)	5.04V	
Shutdown Temperature	[Disabled]	
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

CPU Warning Temperature

Select the CPU over-heated warning temperature.
The choice: Disabled **(default)**, 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F, 70°C/158°F.

Current System Temp

Show System Temperature.

Current CPU Temperature

Shows Board Temperature

CPU FAN Speed

Shows CPU Fan speed.

CHASSIS Fan Speed

Shows CHASSIS Fan speed

Shutdown Temperature

Select the CPU over-heated shutdown temperature.
The choice: Disabled **(default)**, 60°C/140°F, 65°C/149°F, 70°C/158°F, 75°C/167°F

3.9 Frequency/Voltage Control

Phoenix-Award BIOS CMOS Setup Utility Frequency/Voltage Control	
Spread Spectrum [Disabled]	Item Help Menu Level ▶
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default	

Spread Spectrum

Leave this field in its default setting. Do not alter this setting unless advised by an engineer or technician.
The choice: Disabled **(default)**, +/-0.1%, +/-0.2%, +/-0.3%, +/-0.4%, +/-0.5%,+/-0.6%,+/-0.7%,+/-0.8%,+/-0.9%.

3.10 Load Fail-Safe Defaults

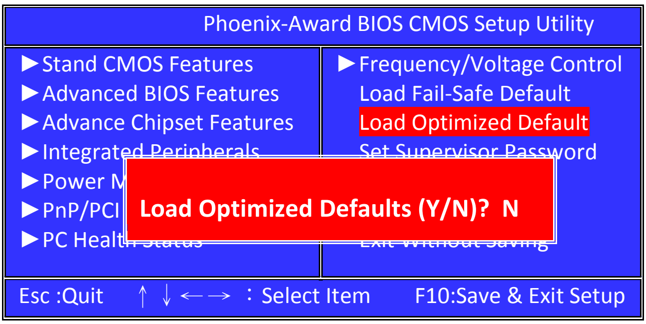
When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Phoenix-Award BIOS CMOS Setup Utility	
▶ Stand CMOS Features ▶ Advanced BIOS Features ▶ Advance Chipset Features ▶ Integrated ▶ Power Ma ▶ PnP/PCI C ▶ PC Health Status	▶ Frequency/Voltage Control Load Fail-Safe Default Load Optimized Default sword Exit Without Saving
Load Fial-Safe Defaults (Y/N)? N	
Esc :Quit ↑ ↓ ←→ : Select Item F10:Save & Exit Setup	

Pressing '**Y**' loads the BIOS default values for the most stable, minimal-performance system operations.

3.11 Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:



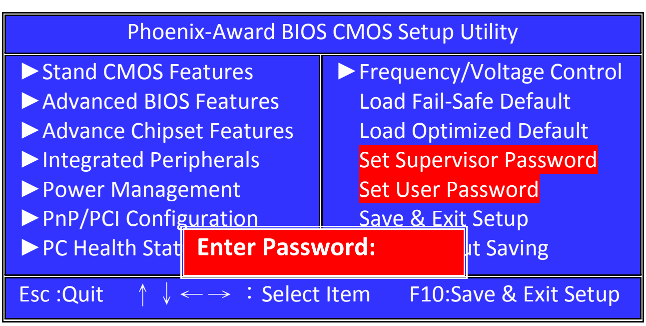
Pressing '**Y**' loads the default values that are factory settings for optimal performance system operations.

3.12 Set Supervisor/ User Password

You can set either supervisor or user password, or both of them. The differences between are:

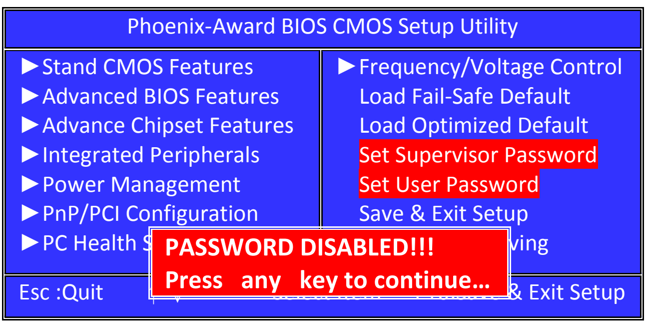
Supervisor password: can enter and change the options of the setup menus.

User password: just can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.



ENTER PASSWORD:
Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.



PASSWORD DISABLED:

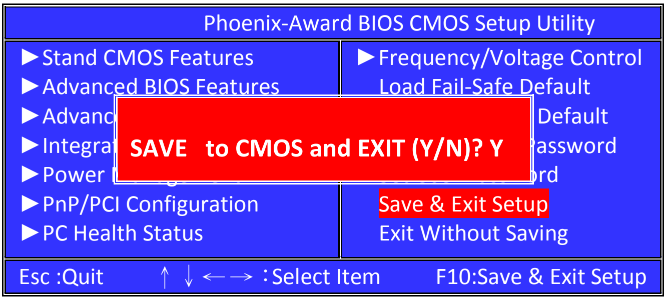
When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

3.13 Save & Exit Setup

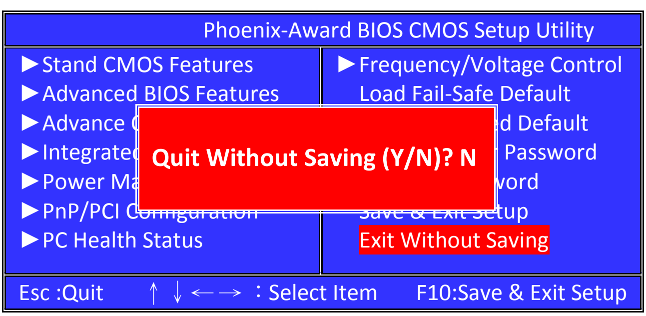
Pressing <Enter> on this item asks for confirmation:



Pressing “**Y**” stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

3.14 Exit Without Saving

Pressing <Enter> on this item asks for confirmation:



This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

CHAPTER 4 Appendix

A. I/O PORT ADDRESS MAP 92
B. INTERRUPT REQUEST LINES (IRQ) 93
C. POST BEEP 94

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. There is a total of 1K port address space available. The following table lists the I/O port addresses used on the Industrial CPU Card.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
278 - 27F	Parallel Port #2(LPT2)
2F8h - 2FFh	Serial Port #2(COM2)
2B0 - 2DF	Graphics adapter Controller
378h - 3FFh	Parallel Port #1(LPT1)
360 - 36F	Network Ports
3B0 - 3BF	Monochrome & Printer adapter
3C0 - 3CF	EGA adapter
3D0 - 3DF	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

B. Interrupt Request Lines (IRQ)

There are a total of 15 IRQ lines available on the Industrial CPU Card. Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on the Industrial CPU Card.

Level	Function
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ5	Reserved
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	Real Time Clock
IRQ9	Software Redirected to Int 0Ah
IRQ10	Reserved
IRQ11	Reserved
IRQ12	PS/2 Mouse
IRQ13	80287
IRQ14	Primary IDE
IRQ15	Secondary IDE

C. POST Beep

Currently there are two kinds of beep codes in BIOS. This code indicates that a **video error** has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps.

The other code indicates that your **DRAM error** has occurred. This beep code consists of a single long beep repeatedly.